



DEFENSE ACQUISITION UNIVERSITY

FE 201 - Intermediate Facilities Engineering

090326

Course Learning/Performance Objectives followed by its enabling learning objectives on separate lines if specified.

1	Describe the relationship that exists between weapons systems acquisition and facilities requirements. Identify the milestones within the systems acquisition framework that may require the application of the Facilities Planning process. Identify the responsibilities of facilities engineers within each phase of the Systems Acquisition Life Cycle.
2	Describe how the DOD is organized to provide Facilities Engineering Support. Describe how the services are organized to provide Facilities Engineering Support. Describe how the Department of the Navy is organized to provide Facilities Engineering Support. Describe how the Department of the Navy is organized to provide Facilities Engineering Support. Describe how the Department of the Air Force is organized to provide Facilities Engineering Support.
3	Describe basic cost estimating techniques/tools used in managing facilities engineering projects. Define "estimating." Describe the types of estimates that apply to facilities engineering projects.
4	Describe the scheduling techniques used to manage risk. Describe the bar chart scheduling technique. Describe the steps used to develop a bar chart. Describe the Critical Path Method (CPM) scheduling technique. Describe the principles used to develop a CPM network. Determine the critical path of a CPM network.
5	Identify the purposes of each of the specific appropriations categories. Identify the purpose(s) for which the following appropriation categories may be used in the defense acquisition community: RDT&E, Procurement, O&M, MILCON, and MILPERS. Describe the following phases of the congressional budget enactment process: Budget Resolution, Authorization, and Appropriation.
6	Describe the purpose, applicability, and implementation of DoD funding policies. Identify the funding policy (annual, incremental, or full) that applies to each of the five major appropriation categories of interest to the defense acquisition community (RDT&E, Procurement, O&M, MILCON, and MILPERS). Describe the three major funding policies used in the defense acquisition financial management community (annual, incremental and full). Describe situations where exceptions to the funding policies are appropriate for the major appropriation categories of RDT&E, Procurement and O&M.
7	Describe working capital funds and their purpose. Describe the concept of revolving funds and the impact of revolving fund activities on acquisition program budgets.
8	Explain the Planning, Programming, Budgeting, and Execution (PPBE) process in relation to each phase of the systems acquisition process. Identify the purpose of each phase of the PPBE process. Identify the major activities, primary inputs, and products of the Planning phase of PPBE. Identify the major activities, primary inputs, and products of the Programming phase of PPBE. Identify the, major activities, primary inputs, and products of the Budgeting and Execution phase of PPBE.
9	Identify the procedures, rules, and public laws associated with the execution of DoD budgets. Identify when an appropriation is current, expired, or cancelled. Describe the DoD rules governing commitments. Describe the DoD rules governing obligations. Identify violations of the Misappropriation Act, the Anti-Deficiency Act, and the Bona Fide Need Rule.
10	Describe each of the functions associated with acquisition planning and determine who (contracting personnel or facilities engineering personnel) is responsible for completing each function. Determine who is responsible for performing each of the functions associated with forecasting future acquisition requirements and contract planning. List factors to consider when selecting contract types.



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	Define fixed-price contracts, cost-reimbursement contracts, indefinite-delivery contracts, and basic ordering agreements.
	Compare and describe the differences between the two solicitation formats, Construction Specification Institute (CSI) format and Uniform Contract Formation (UCF) format.
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with services contracts and delivering Government Furnished Property (GFP).
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with identifying and evaluating sources and ensuring that competition requirements are met.
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with developing the source selection strategies (including lease or buy decisions, price and non-price factors, and the specific method of procurement).
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with developing the solicitation terms and conditions (including the pricing arrangement, recurring requirements, and financing).
11	Describe each of the functions associated with contract formation, and determine who (contracting personnel or facilities engineering personnel) is responsible for completing each function.
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with preparing the solicitation (including the statement of work, specification, instructions to offerors, evaluation factors for award, submittals, incentive/award fee calculation, and warranty terms).
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with publicizing the solicitation, responding to pre-award inquiries, holding post-solicitation conferences, and canceling or amending the solicitation when necessary.
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with selecting the source (including processing offers/bids, quotes and proposals; evaluating price and non-price factors; defining the competitive range; and preparing the pre-negotiation plan).
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with preparing and issuing the contract and responding to protests.
12	Describe each of the functions associated with contract administration and determine who (contracting personnel or facilities engineering personnel) is responsible for completing each function.
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with work initiation (including planning for proper contract administration, conducting any necessary post-award briefings, and implementing the appropriate subcontracting requirements).
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with contract modifications (including options and task and delivery order contracts).
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with contract quality assurance (including monitoring and documenting contractor performance, evaluating proposed engineering changes, conducting design reviews, stopping or suspending work, and seeking remedies.)
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with contract accounting (including calculating the amounts of payments to the contractor, verifying the contractor's cost or pricing data, adjusting prices and award fees, limiting cost overruns, and collecting contractor debt).
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with administering GFP, protecting intellectual property, and ensuring contractor compliance with socioeconomic requirements.
	Determine who (contracting personnel or facilities engineering personnel) is responsible for performing each of the functions associated with contract closeout and termination.
13	Given a facilities requirement scenario, identify when there is a real estate acquisition component /implication on the facilities engineering processes.
	Describe the categories and methods of acquiring real estate interests



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	Explain the responsibilities of DoD personnel with real estate authority with respect to real estate actions
14	<p>Given a facilities requirement scenario, identify when there is a real estate management component /implication on the facilities engineering processes.</p> <p>Discuss the goals and objectives of the real property management program.</p> <p>Define outgrants and when the use of an outgrant may be appropriate.</p>
15	<p>Describe environmental requirements that address Environmental Planning during the DOD facility life cycle.</p> <p>Identify appropriate environmental planning requirements, concepts, and principles in the DoD facility life cycle.</p> <p>Describe how proper environmental management positively impacts installation sustainability, improved business practices, and reduction in overall associated costs.</p> <p>Describe various agency and legislative considerations associated with installation environmental assessments and plans.</p> <p>Describe the three-tiered approach used to ensure proper gathering and dissemination of pertinent environmental information to be used in the decision-making process.</p> <p>Describe the favorable outcomes resultant from proper incorporation of environmental considerations into the facilities' planning process.</p>
16	<p>Describe environmental requirements that address Compliance during the DOD facility life cycle.</p> <p>Describe environmental compliance requirements that should be addressed during the DoD facility life cycle.</p> <p>Describe how the implementation of an Environmental Management System (EMS) aids in installation sustainability, improved compliance and streamlined business practices, and reduction in overall associated costs.</p> <p>Identify facilities operations and processes that may be regulated by the following acts: Clean Water Act, Safe Drinking Act, Toxic Substance Control Act, Clean Air Act, and Resource Conservation and Recovery Act.</p> <p>Define and describe the use and handling of hazardous materials, and the proper management, transportation, and disposal of hazardous waste.</p>
17	<p>Describe environmental requirements that address Pollution Prevention during the DOD facility life cycle.</p> <p>Identify the key purpose of the Pollution Prevention (P2) program.</p> <p>Describe environmental requirements that address Pollution Prevention (P2) topics during the DoD facility life cycle.</p>
18	<p>Describe environmental requirements that address Conservation during the DOD facility life cycle.</p> <p>Define and examine the concepts of cultural resources.</p> <p>Define and examine the concepts of natural resources.</p> <p>Identify the functional reviewing agencies for project design.</p> <p>Describe the effect of Natural Resources laws and regulations on DoD.</p> <p>Describe the use and effects of natural and cultural resource management plans and planning (INRMP, ICRMP, IPMP, AICUZ) on DoD.</p>
19	<p>Describe environmental requirements that address Environmental Restoration during the DOD facility life cycle.</p> <p>Describe the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and how it applies to DoD.</p> <p>Describe the Installation Restoration program as it applies to CERCLA and DoD.</p> <p>Describe the National Priorities List, or Superfund List, and how it applies to the DoD's operations.</p>
20	<p>Identify environmental requirements that address Range Management during the DOD facility life cycle.</p> <p>Describe the concept of encroachment.</p> <p>Explain the eight critical encroachment issues.</p> <p>Explain the relationship between sustainable range management and endangered species protection.</p>
21	<p>In your own words, describe the basic components of a Comprehensive Plan.</p> <p>List the various types of environments that need to be considered when creating a Comprehensive Plan (sometimes referred to as a Master Plan) and give specific examples of each.</p> <p>Briefly describe the four part planning process and the responsibilities of facilities engineers at each step.</p> <p>Identify the subordinate documents used to create a Comprehensive Plan and briefly describe each.</p>
22	<p>Identify the steps of the Project Planning Process.</p> <p>Identify the steps of the Project Planning Process.</p>



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	<p>Given a facilities planning budget, identify where appropriation will come from, the classifications of work to which it will be applied, and the authority from which approval must be obtained.</p> <p>Identify the programming documents required for a MILCON project.</p>
23	<p>Describe basic design considerations that must be taken into account when outlining the project.</p> <p>Identify the various stages of the design process</p> <p>Identify funding sources</p> <p>Select an appropriate design methodology</p> <p>Familiarize yourself with a new project and identify research sources</p> <p>List design review agencies and describe the purpose of their reviews</p> <p>Outline construction specifications</p>
24	<p>Discuss the application of in-house design for facilities engineering requirements.</p> <p>Specify reasons for using in-house design capabilities.</p> <p>Describe the roles and responsibilities of personnel involved with an in-house design project.</p> <p>State specific in-house design limitations.</p>
25	<p>Discuss the application of A/E design for facilities engineering requirements.</p> <p>Identify A-E services as outlined by FAR Part 36.601-4 (a).</p> <p>Describe the statutory fee limitation and identify services included and excluded in this limitation.</p> <p>Identify the major steps of the selection of Architect-Engineer contractors.</p> <p>Identify the elements of a government cost estimate.</p> <p>Identify issues and contract clauses that may come into play during the project's construction phase.</p>
26	<p>Given a facility planning requirement, discuss the design-build process.</p> <p>Describe the general process of project delivery using Design-Build.</p> <p>Identify advantages of using a Design-Build approach.</p> <p>Describe the procedures for selecting a Design-Build contractor as set forth in the Federal Acquisition Regulations (FAR).</p> <p>Define roles and responsibilities in a Design-Build contract.</p>
27	<p>Given a facility planning requirement, discuss the design-bid-build process</p> <p>Describe the general process of project delivery using Design-Bid-Build</p> <p>Identify advantages of using a Design-Bid-Build approach</p> <p>Define roles and responsibilities in a Design-Bid-Build contract</p> <p>Identify the Federal Acquisition Regulations that address the awards of federal construction contracts</p> <p>Describe a situation where the issuance of an Invitation for Bid is appropriate</p> <p>Describe a situation where the issuance of an Request for Proposal is appropriate</p> <p>Define 'Synopsis' and describe how it is used by a contracting officer</p> <p>Describe the difference between sealed bidding and negotiation</p>
28	<p>Given a facility planning requirement discuss task order contracts (SABER, JOC).</p> <p>Describe task order contracts.</p> <p>Describe the process followed to issue task orders.</p> <p>Identify elements of a requirements package.</p>
29	<p>Identify the laws, clauses and general requirements used in the formation of construction contracts.</p> <p>Identify the contract laws and clauses used in the formation of construction contracts.</p> <p>Describe how government-furnished equipment is handled in contract formation.</p> <p>Describe the partnering contract management technique.</p>
30	<p>Identify the laws, clauses and general requirements used in the administration of construction contracts.</p> <p>Identify the contract laws and clauses used in the administration of construction contracts.</p>



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	Identify the elements that should be considered in the administration of construction contracts.
31	Identify the laws, clauses and general requirements used in the administration of changed conditions on construction contracts. Identify the change-related construction clauses that apply during administration of changed conditions. Identify other change elements that should be considered during contract administration of changed conditions.
32	Identify and explain the concepts and impacts used in managing facilities sustainment, restoration, and modernization. Identify the concepts and practices of operational readiness. Identify the concepts, practices, and impacts of facilities Sustainment, Restoration & Modernization (SRM). Identify the concepts, practices, and impacts of recapitalization
33	Describe the approach used to evaluate investment alternatives for the management of facilities sustainment, given the built environment and surroundings. Describe the basic elements of an economic analysis of investment alternatives that will affect decisions in the management of sustainment functions. Describe the investment alternatives to consider that will satisfy the management of sustainment functions. Identify the analytical methodology and criteria used in the development of investment alternatives for the management of sustainment functions.
34	Describe the main elements of the Work Management System. Describe the work management system. Identify the work generation methods used in facilities upkeep. Identify the factors that contribute to work accomplishment. Describe work input control. Describe the concepts and practices of competitive sourcing and privatization. Describe the processes for acquiring municipal services. Describe the usage of performance-based contracts. Describe the usage of Base Operating Support (BOS) contracts. Describe the usage of Utilities and Energy Savings contracts.
35	Given a facilities requirement scenario, identify when there is a real estate disposal component /implication on the facilities engineering processes. Discuss the methods of disposal of land, improvements, buildings, and structures. Identify limitations, delegations, policies and procedures for disposing of real property under a variety of unique, specific legislative authorities. Identify the environmental requirements preceding disposal.
36	Given facility requirement scenarios, identify the Military resources and capabilities available to perform contingency engineering. Describe the military engineer unit's resident within the Armed Services. Identify various military engineer units according to the Armed Service. Describe the various specialties provided by each of the military engineer units.
37	Given facility requirement scenarios, identify the contacting resources and capabilities available to perform contingency engineering. Describe advantages gained by utilizing local civilian engineering capabilities to augment mission-assigned engineer personnel. Identify various augmentation programs created to provide operational support.
38	Given facility requirement scenarios, identify the technological resources and capabilities available to perform contingency engineering. Describe the benefits provided for engineering operations by advanced technological capabilities. Identify a variety of technology capabilities available to facilities engineers.